

WE CLAIM:

1. A device for heat shrinking a cover onto an open-topped container, said device comprising:
 - a housing adapted to receive said container; and
 - 5 having a strip of heat shrinkable thin film;
 - a cutting means positioned adjacent said thin film for cutting said thin film upon said thin film being urged onto said cutting means by said container;
 - a hood for holding a cut piece of said film in 10 place across said open top of said container, wherein said cut piece includes a portion extending from under said hood downwardly around an upper outer rim of said container;
 - a first radiant energy source for directing 15 energy toward said downwardly extending portion of said cut piece of film;
 - a first means to absorb radiant energy to transfer heat to said downwardly extending portion of said cut piece of film; and
 - 20 a switch means for intermittently energizing said first radiant energy source whereby said downwardly extending portion of said cut piece of film is shrunk onto said rim;
2. A device as claimed in claim 1 further including 25 a timer means for de-energizing said first radiant energy source after a predetermined time and for energizing a second radiant energy source located in said hood; said second radiant energy source directing energy onto a second means to absorb radiant energy, to transfer heat to 30 the thin film across the top of the container;
 - whereby said cut piece of film is shrunk across the top of said container after being shrunk around the rim of said container to form a spill resistant cover.

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3. A device as claimed in claim 1 wherein said first means to transfer heat to said downwardly extending portion of said cut piece of film comprises adapting said film to absorb at least some of said radiant energy.
- 5 4. A device as claimed in claim 3 wherein said film is adapted by being made at least partially opaque to said radiant energy, and upon being exposed to said radiant energy said opaque film heats up.
- 10 5. A device according to claim 4 wherein said thin film is made at least partially opaque by being tinted.
6. A device according to claim 4 wherein said thin film is made at least partially opaque by being coated with an energy absorbing coating.
- 15 7. A device as claimed in claim 1 wherein said first means to transfer heat to said downwardly extending portion of said cut piece of film comprises mounting an energy absorbent body adjacent to said thin film.
- 20 8. A device as claimed in claim 7 in which said energy absorbing body comprises a darkened aluminum screen.
- 25 9. A device as claimed in claim 1 in combination with a container, and wherein said first means to transfer heat to said downwardly extending portion of said cut piece of film comprises adapting said container to absorb said radiant energy adjacent said downwardly extending portion.
10. A device as claimed in claim 9 wherein said container is adapted by having an energy absorbent band located below an upper rim thereof.

11. A device as claimed in claims 3, 7 or 9 wherein said housing includes a dispensing reel and a take-up reel for a continuous strip of said thin film.
12. A device according to claim 11 wherein said thin film is a biaxial film of between 40 to 120 gauge thickness.
13. A device according to claim 12 wherein said thin film has a width greater than the width of said knife to form a trim after said cut portion is made, said trim being sufficient to allow said film to be advanced by a tensile force in said trim without tearing.
14. A device according to claims 3, 7 or 9 further including a locator which comprises at least one guide plate.
15. A device according to claim 14 wherein said locator comprises an opposed pair of guide plates, at least one of which is spring loaded.
16. A device according to claim 14 wherein said locator comprises an opposed pair of spring loaded guide plates having curved container contacting surfaces for centering the container.
17. A device according to claims 3, 7 or 9 wherein said knife means comprises a heated steel rule.
18. A device according to claim 17 wherein said knife means defines a cut piece of thin film having a symmetrical overhang around all edges of said container.
19. A device according to claim 17 wherein said knife is heated by a resistance heater to a temperature of between 275°F and 400°F.

20. A device according to claims 3, 7 or 9 wherein said hood covers said top film to prevent said top film from being directly exposed to energy from said first radiant energy source.
- 5 21. A device according to claim 2 wherein said second means to absorb radiant energy comprises means to render said film at least partially opaque to radiant energy from said second radiant energy means.
- 10 22. A device as claimed in claim 21 wherein said thin film is tinted to absorb energy from said second radiant energy source.
- 15 23. A device as claimed in claim 21 wherein said thin film is printed to absorb energy from said second radiant energy source.
- 20 24. A device according to claim 2 wherein said second means to absorb radiant energy comprises a darkened aluminum screen.
25. A device according to claim 2 further including a piercing tool to make at least one hole in said cut piece of thin film.
- 25 26. A device as claimed in claim 21 wherein said film includes a pattern of discrete opaque dots forming a predetermined pattern to cause perforations upon exposure to said second radiant energy means.
- 30 27. A device according to claim 1 further including a motor, a drive means connecting said motor to said first radiant energy source and wherein said switch means energizes said motor as well as said first radiant energy source, and said first radiant energy source is rotated around said rim.

28. A device according to claim 27 wherein said first radiant energy source is pivotally mounted on an arm, and said hood is displaceable, and on displacement of said hood, said arm is pivoted about a pivot point to 5 cause said first radiant energy source to be positioned adjacent said downwardly extending portion of said cut piece of thin film.

29. A device according to claim 28 in which said top hood further includes a ledge, and said arm further 10 includes a roller which rolls along said ledge upon rotation of said first radiant energy source.

30. A device according to claim 27 when said first radiant energy source rotates at about 100 rpm.

31. A device according to claim 28 wherein said arm further includes a means for urging said portion of said 15 film into contact with said rim.

32. A device as claimed in claim 10 wherein said energy absorbent band has at least one gap formed therein, to facilitate removal of a shrunk piece of film from said 20 container.

33. A device as claimed in claim 1 wherein said switch means comprises at least one contact operated limit switch.

34. A device as claimed in claim 2 wherein said timer means allows said first radiant energy source to be energized for at least one full revolution.

35. A device as claimed in claim 34 wherein said device includes at least two first radiant energy sources and said timer means allows said two first radiant energy 30 sources to be energized for at least one half revolution.

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